

less than one half of the length of the head. Epidermoid productions rudimentary, lanceolate, obliquely arranged, imbedded in the skin. Anal higher than dorsal.

Blackish brown.

Off Inosima.

Nettastoma parviceps.

Head small, its length being two fifths of the distance between the gill-opening and vent (more than one half in *N. melanurum*). Dorsal fin commencing in advance of the gill-opening. In other respects similar to the Mediterranean species.

South of Yeddo.

Monacanthus modestus.

D. 36. A. 34.

Skin velvety, without spines or bristles on the tail; the height of the body is contained twice and three fourths in the total length (without caudal); upper profile of the head convex, the gill-opening extends downwards to the level of the middle of the root of the pectoral; the dorsal spine is inserted above the posterior third of the eye; it is scarcely half as long as the head, or as its distance from the second dorsal fin; it is armed with four series of very small barbs, the two front series being very close together; the anterior half of the dorsal and anal fins elevated, somewhat higher than the dorsal spine; ventral spine fixed.

Uniform brownish grey; caudal blackish, with the interradial membrane whitish and without any cross bands.

Inland Sea.

MISCELLANEOUS.

M. K. A. Zittel on Fossil Hexactinellida.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—Permit me to correct a slight mistake that has crept into Prof. Zittel's diagnosis of the scheme I adopted in the year 1870* for the natural subdivision of the then known Hexactinellid sponge-forms, and which error is reproduced in Mr. Dallas's translation in the last number of the 'Annals.' Of the two groups of the "*Coralliospongia*" and "*Calicispongia*" then instituted by me, it was the former of the two that was made to embrace all those species distinguished by the possession of an "anastomosing

* 'Monthly Microscopical Journal,' vol. iv. p. 252, 1870.

or coherent reticulate skeleton," while with the latter were associated types in which the skeleton consisted of "isolated or loosely interwoven spicules" only. Zittel, as I find by reference to a copy of his original essay, with which he has kindly furnished me, makes it accidentally read exactly the reverse. In my original diagnosis (*l. c.* p. 252) I further proposed to characterize the group of the "*Calicispongiae*" as possessing spicule-protected gemmules instead of both having "naked membranous gemmules" as rendered by Prof. Zittel.

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4 Marine Terrace, St. Heliers, Jersey,
Oct. 17, 1877.

Phenomena accompanying the Metamorphosis of Libellula depressa.

By M. JOUSSET DE BELLESME.

The author gives an extraordinary account of the mode in which *Libellula depressa* expands to its full size and extends its wings after quitting the pupa-skin. After describing the well-known process of the emergence of the insect, he inquires by what mechanism does the insect inflate itself and increase its volume to such an extent that after issuing from its little envelope it suddenly becomes double its former size.

He states that at this time the function of respiration, which is very active in the adult dragonfly, is not yet set up. There are no movements of inspiration and expiration; the abdomen is cylindrical; and the deep fold in the ventral surface of the abdomen, which he regards as essential to respiration, is not yet in existence. On dissection the air-sacs of the body are found to be empty and flaccid.

Nevertheless the inflation of the dragonfly is effected by air; and if the body is cut through with a pair of scissors it collapses in a moment like a balloon. By taking suitable precautions and dissecting the animal under water, it is found, he says, that the digestive tube here performs a most unusual physiological part. It is so much distended that it absolutely fills the whole interior of the body, pushing the other organs against the integuments. Under the influence of this energetic pressure the blood is pressed forcibly towards the periphery, distends the eyes, and gives the head its definitive form; then passing into the wing, between the two membranes, which up to this time are separate, as M. Blanchard has described them, it accumulates in the wing, unfolds it, and circulates in it, depositing the pigment which is destined to colour it. During this time the integuments, which are distended and bathed by the nutritive fluid, acquire their proper colour and solidity. It is by swallowing the air and storing it in its digestive tube, says the author, that the *Libellula* obtains the force necessary for the accomplishment of most of its transformations; and he thinks there is every reason to believe that the same thing occurs in many other insects.—*Comptes Rendus*, August 20, 1877, p. 448.